

IT IS CLAIMED:

1. A CPAP apparatus including:  
a variable pressured air source and means to  
vary the air pressure delivered therefrom;

a nose piece for sealed air communication with  
5 a patient's respiratory system;

an air communication line from the air source  
to the nose piece;

a pressure sensor adapted to be in pressure  
communication with the patient's respiratory system  
10 connected to a circuit for processing the output from  
the pressure sensor to detect snoring patterns or  
abnormalities in other breathing parameters; and,

a feedback system controlling the output  
pressure of the air source in response to an output from  
15 the sensor and processing circuit so as to increase the  
output air pressure from said air source, in response to  
detection of snoring or abnormalities in other breathing  
parameters in accordance with a predefined procedure.

2. Apparatus as claimed in claim 1 wherein  
the air source is a variable speed air compressor.

3. An apparatus as claimed in claim 2 wherein  
the feedback control system reduces the output pressure  
of the compressor in response to an absence of said  
sound or abnormality in other breathing parameters in  
5 accordance with a further predefined procedure.

4. An apparatus as claimed in claim 3 wherein  
the sensor is a microphone rigid with the nose piece so  
as to receive vibrations caused by patient snoring.

5. An apparatus as claimed in claim 3 wherein  
the nose piece is a nose mask.

6. An apparatus as claimed in claim 3 wherein the sensor is a microphone enclosed within the nose piece being a nasal prong device.

7. An apparatus as claimed in claim 2 wherein the maximum speed of the air compressor selectable by the feedback control system is adjustably preselected.

8. A variable speed air compressor and control system for a CPAP apparatus, the control system regulating the speed of the compressor when in use by increasing speed in accordance with a predefined procedure.

9. An air compressor and control system as claimed in claim 8 wherein the predefined procedure includes increasing the speed of the compressor in response to a predetermined signal indicative of patient snoring or abnormality in other breathing parameters.

10. An air compressor and control system as claimed in claim 9 wherein the predefined procedure further includes decreasing the speed of the air compressor in the absence of the signal, the decrease in speed being at a preselected rate in accordance with a further predefined procedure.

11. A variable speed compressor and control system as claimed in claim 8 wherein the predefined procedure comprises commencing operation of the compressor at a preselected minimum speed and gradually increasing the speed over a preselected period of time to a preselected maximum speed.

12. A CPAP apparatus including a variable speed air compressor and control system as claimed in

claim 10 wherein a compressed air outlet of the air compressor is connected to an air supply line of the  
5 CPAP apparatus, the supply line being furthermore connected to a nose piece for air communication to the respiratory system of the patient.

13. Diagnostic apparatus comprising a pressure sensor adapted to be positioned in pressure wave receiving communication with the respiratory system of a patient, recordal apparatus connected to the sensor  
5 for recording signals produced by the sensor responsive to sounds indicative of snoring patterns or abnormality in breathing patterns of the patient.

14. Apparatus as claimed in claim 13 wherein said signals comprise a processed output from the pressure sensor recorded against time and indicating snoring patterns and/or snoring pattern indexes and/or  
5 indexes of abnormalities in other breathing parameters.

15. In a CPAP apparatus, a pressure monitoring device in pressure wave communication with the respiratory system of a patient when using the apparatus, and a control system, responsive to output  
5 from the pressure monitoring device so as to control CPAP pressure according to patient requirements as determined by output from the pressure monitoring device.

16. In a CPAP apparatus including a variable speed blower, a nose piece, and interconnecting air lines, a pressure sensor fixed internally of the nose piece so as to be in pressure wave communication with

5 the respiratory system of a patient when using the apparatus, and a control system responsive to output from the sensor so as to control CPAP pressure according to patient requirements as determined by the output from the sensor.

17. A method of diagnosis including applying to a patient before sleep a nose piece containing a pressure sensor connected to a pressure signal recording apparatus, and identifying snoring patterns or other abnormal breathing patterns where indicated by the recorded signal so as to diagnose occurrences of apneic episodes or other respiratory disorders.

18. A method as defined in claim 17 wherein the pressure signals are processed by an electronic processor programmed so as to distinguish predefined snoring patterns or other abnormal breathing patterns and provide signals to the recording apparatus indicative of the occurrence of the predefined snoring pattern or other abnormal breathing pattern.

19. A method of CPAP therapy including: monitoring a patient's snoring and/or breathing patterns using a pressure sensor in pressure wave communication with the patient's respiratory system;

identifying predetermined characteristic snoring and/or breathing patterns by electronic analysis of signals from the sensor; and

automatically increasing CPAP pressure delivered to the patient by a predetermined amount responsive to each identified said characteristic snoring or abnormal breathing pattern.

20. A method as defined in claim 19 wherein CPAP pressure delivered to the patient is automatically gradually decreased in the absence of said characteristic snoring or abnormal breathing patterns.

21. A method as defined in claim 19 wherein CPAP therapy is commenced at a low CPAP pressure delivered to the patient.

22. A method of CPAP therapy including commencing therapy at a preset minimum CPAP pressure delivered to the patient and then gradually increasing said pressure over a preset period of time to a preset therapeutic pressure.

23. A method of CPAP therapy as defined in claim 19 and further comprising recording pressure levels, against time, delivered to the patient.

24. A method of CPAP therapy as defined in claim 19 and further comprising recording snoring or abnormal breathing patterns against time so as to confirm correct operation of the CPAP apparatus.